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14 CFR Part 25

**Fire Protection Requirements for
Powerplant Installations on Transport
Category; Final Rule**

DEPARTMENT OF TRANSPORTATION**Federal Aviation Administration****14 CFR Part 25****[Docket No.: FAA-2000-7471; Amendment No. 25-101]****RIN 2120-AG94****Fire Protection Requirements for Powerplant Installations on Transport Category Airplanes****AGENCY:** Federal Aviation Administration (FAA), DOT.**ACTION:** Final rule.

SUMMARY: The Federal Aviation Administration amends the airworthiness standards for transport category airplanes to establish a new requirement for fire protection of powerplant installations. This amendment requires that components within a designated fire zone must be fireproof if, when exposed to or damaged by fire, they could pose a hazard to the airplane. Issuing this amendment eliminates regulatory differences between the airworthiness standards of the U.S. and the Joint Aviation Requirements of Europe, without affecting current industry design practices.

DATES: Effective January 18, 2001.**FOR FURTHER INFORMATION CONTACT:**

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SUPPLEMENTARY INFORMATION:**Availability of Rulemaking Documents**

You can get an electronic copy using the Internet by taking the following steps:

(1) Go to the search function of the Department of Transportation's electronic Docket Management System (DMS) web page (<http://dms.dot.gov/search>).

(2) On the search page type in the last four digits of the Docket number shown at the beginning of this notice. Click on "search."

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You can also get an electronic copy using the Internet through FAA's web page at <http://www.faa.gov/avr/arm/>

or <http://www.faa.gov/avr/arm/> nprm.htm or the **Federal Register's** web page at http://www.access.gpo.gov/su_docs/aces/aces140.html.

You can also get a copy by sending a request to the Federal Aviation Administration, Office of Rulemaking, ARM-1, 800 Independence Avenue SW., Washington, DC 20591, or by calling (202) 267-9680. Make sure to identify the amendment number or docket number of this rulemaking.

Small Business Regulatory Enforcement Fairness Act

The Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996 requires FAA to comply with small entity requests for information or advice about compliance with statutes and regulations within its jurisdiction. Therefore, any small entity that has a question regarding this document may contact their local FAA official, or the person listed under **FOR FURTHER INFORMATION CONTACT**. You can find out more about SBREFA on the Internet at our site, <http://www.gov/avr/arm/sbreffa.htm>. For more information on SBREFA, e-mail us at 9-AWA-SBREFA@faa.gov.

Background*What Are the Relevant Airworthiness Standards in the United States?*

In the United States, Title 14, Code of Federal Regulations (CFR) part 25 contains the airworthiness standards for type certification of transport category airplanes. Manufacturers of transport category airplanes must show that each airplane they produce of a different type design complies with the appropriate part 25 standards. These standards apply to:

- Airplanes manufactured within the U.S. for use by U.S.-registered operators, and
- Airplanes manufactured in other countries and imported to the U.S. under a bilateral airworthiness agreement.

What Are the Relevant Airworthiness Standards in Europe?

In Europe, Joint Aviation Requirements (JAR)-25 contains the airworthiness standards for type certification of transport category airplanes. The Joint Aviation Authorities (JAA) of Europe developed these standards, which are based on part 25, to provide a common set of airworthiness standards within the European aviation community. Twenty-three European countries accept airplanes type certificated to the JAR-25 standards, including airplanes manufactured in the U.S. that are type

certificated to JAR-25 standards for export to Europe.

What is "Harmonization" and How Did It Start?

Although part 25 and JAR-25 are similar, they are not identical in every respect. When airplanes are type certificated to both sets of standards, the differences between part 25 and JAR-25 can result in substantial added costs to manufacturers and operators. These added costs, however, often do not bring about an increase in safety. In many cases, part 25 and JAR-25 may contain different requirements to accomplish the same safety intent. Consequently, manufacturers are usually burdened with meeting the requirements of both sets of standards, although the level of safety is not increased correspondingly.

Recognizing that a common set of standards would not only benefit the aviation industry economically, but also preserve the necessary high level of safety, the FAA and the JAA began an effort in 1988 to "harmonize" their respective aviation standards. The goal of the harmonization effort is to ensure that:

- Where possible, standards do not require domestic and foreign parties to manufacture or operate to different standards for each country involved; and
- The standards adopted are mutually acceptable to the FAA and the foreign aviation authorities.

The FAA and JAA have identified many significant regulatory differences (SRD) between the wording of part 25 and JAR-25. Both the FAA and the JAA consider "harmonization" of the two sets of standards a high priority.

What Is ARAC and What Role Does It Play in Harmonization?

After beginning the first steps towards harmonization, the FAA and JAA soon realized that traditional methods of rulemaking and accommodating different administration procedures was neither sufficient nor adequate to make noticeable progress towards fulfilling the goal of harmonization. The FAA then identified the Aviation Rulemaking Advisory Committee (ARAC) as an ideal vehicle for helping to resolve harmonization issues, and, in 1992, the FAA tasked ARAC to undertake the entire harmonization effort.

The FAA had formally established ARAC in 1991 (56 FR 2190, January 22, 1991), to provide advice and recommendations on the full range of the FAA's safety-related rulemaking activity. The FAA sought this advice to develop better rules in less overall time and using fewer FAA resources than

previously needed. The committee provides the FAA firsthand information and insight from interested parties on potential new rules or revisions of existing rules.

There are 64 member organizations on the committee, representing a wide range of interests within the aviation community. Meetings of the committee are open to the public, except as authorization by section 10(d) of the Federal Advisory Committee Act.

The ARAC sets up working groups to develop recommendations for resolving specific airworthiness issues. Tasks assigned to working groups are published in the **Federal Register**. Although working group meetings are not generally open to the public, the FAA invites participation in working groups from interested members of the public who have knowledge or experience in the task areas. Working groups report directly to the ARAC, and the ARAC must accept a working group proposal before ARAC presents the proposal to the FAA as an advisory committee recommendation.

The activities of the ARAC will not, however, circumvent the public rulemaking procedures; nor is the FAA limited to the rule language "recommended" by ARAC. If the FAA accepts an ARAC recommendation, the agency continues with the normal public rulemaking procedures. Any ARAC participation in a rule making package is fully disclosed in the public docket.

What Is the Status of the Harmonization Effort Today?

Despite the work that ARAC has undertaken to address harmonization, there remain many regulatory differences between part 25 and JAR-25. The current harmonization process is costly and time-consuming for industry, the FAA, and the JAA. Industry has expressed a strong desire to finish the harmonization program as quickly as possible to relieve the drain on their resources and to finally establish one acceptable set of standards.

Recently, representatives of the aviation industry [including Aerospace Industries Association of America, Inc. (AIA), General Aviation Manufacturers Association (GAMA), and European Association of Aerospace Industries (AECMA)] proposed an accelerated process to reach harmonization.

What Is the "Fast Track Harmonization Program"?

In light of a general agreement among the affected industries and authorities to speed up the harmonization program, the FAA and JAA in March 1999 agreed

on a method to achieve these goals. This method, titled "The Fast Track Harmonization Program," seeks to speed up the rulemaking process for harmonizing not only the 42 standards that are currently tasked to ARAC for harmonization, but nearly 80 additional standards for part 25 airplanes.

The FAA launched the Fast Track program on November 26, 1999 (64 FR 66522). This program involves grouping all the standards needing harmonization into three categories:

Category 1: Envelope—For these standards, parallel part 25 and JAR-25 standards would be compared, and harmonization would be reached by accepting the more stringent of the two standards. Thus, the more stringent requirement of one standard would be "enveloped" into the other standard. Occasionally, it may be necessary to incorporate parts of both the part 25 and JAR standard to achieve the final, more stringent standard. (This may call for each authority revising its current standard to incorporate more stringent provisions of the other.)

Category 2: Completed or near complete—For these standards, ARAC has reached, or has nearly reached, technical agreement or consensus on the new wording of the proposed harmonized standards.

Category 3: Harmonize—For these standards, ARAC is not near technical agreement on harmonization, and the parallel part 25 and JAR-25 standards cannot be "enveloped" (as described under Category 1) for reasons for safety or unacceptability. A standard developed under Category 3 would be mutually acceptable to the FAA and JAA, with a consistent means of compliance.

Further details on the Fast Track Program can be found in the tasking statement (64 FR 66522, November 26, 1999) and the preamble to the notice for this amendment (65 FR 36978, June 12, 2000).

How Does This Amendment Relate to "Fast Track"?

This amendment results from recommendations that ARAC submitted to the FAA under the FAA's Fast Track Harmonization Program. This rulemaking project has been identified as a Category 2 item.

What Did the FAA Propose?

On June 1, 2000 (65 FR 36983, June 12, 2000), the FAA proposed to revise § 25.1183 to include an extra paragraph that currently appears in the parallel JAR 25.1183 as paragraph (c). That paragraph states:

"(c) components, including ducts, within a designated fire zone must be fireproof if, when exposed to or damaged by fire, they could—

(1) Result in fire spreading to other regions of the airplane; or

(2) Cause unintentional operation of, or inability to operate, essential services or equipment."

The FAA considers adding this paragraph to part 25 necessary to:

- Harmonize the text of part 25 with the JAR on this particular issue,
- Clarify the intent of the part 25 regulation, and

• Provide extra assurance that all "components" that need to be fireproof will be identified and qualified during certification.

Adding § 25.1183(c) in part 25 aligns the U.S. regulations with their European counterparts, and the words of both airworthiness standards will be exactly parallel. Adoption of this amendment benefits the public interest by standardizing the requirements, concepts, and procedures contained in the U.S. and European airworthiness standards without reducing the current level of safety.

What Is the Effect of This New Requirement on Other Current Regulations?

The FAA recognizes that this added requirement might seem redundant to other existing part 25 sections, including:

1. *Section 25.1181 ("Designated fire zones; regions included")*: This section identifies which areas of the powerplant installation are "fire zones," including the engine power section, the engine accessory section, and the auxiliary power unit (APU) compartment. It also requires that each of these fire zones meet the fire protection requirements of:

- § 25.867 (pertaining to components of the nacelles); and
- § 25.1185 through § 25.1203 (pertaining to flammable fluids, drainage and ventilation of fire zones, means of fuel shutoff, fire extinguishing systems and agents, fire detection systems, etc.).

2. *Section 25.1191 ("Firewalls")*: This section requires that each engine, APU, fuel-burning heater, and other components and areas of the (turbine) engine be isolated from the rest of the airplane by firewalls or other equivalent means. It also requires that each firewall be:

- Fireproof,
- Leakproof (so no hazardous quantity of air, fluid, or flame can pass from the compartment),
- Sealed (so all openings are sealed with close fitting fireproof fasteners), and

- Protected against corrosion.

3. *Section 25.901(c) ("Powerplant, General—Installation")*: This section requires that each powerplant and APU installation be designed so no single failure, malfunction, or combination of failures will jeopardize the safe operation of the airplane. (It also specifies that the failure of structural elements need not be considered if the applicant determines the probability of such failure to be extremely remote.)

While these regulations may seem redundant *in effect* to the new paragraph 25.1183(c), the FAA considers it valuable to clarify the objective of these rules by adding the new paragraph.

Further, the only difference between these current sections and the new § 25.1183(c) is that the new paragraph addresses fire protection specifically at the "component level," while the other requirements address fire protection at the "zone level" and the "installation level."

To meet the "zone level" or "installation level" objectives currently within part 25, the components of the installation must be sufficiently fireproof to comply with § 25.1183(c). Therefore, the FAA considers that the "component level" requirement is met inherently by meeting:

- The more general "zone level" requirements of § 25.1181 and § 25.1191, and
- The "installation level" requirements of § 25.901(c).

In other words, the requirements of § 25.1183(c) essentially are met already when an applicant properly shows compliance with § 25.1181, § 25.1191, § 25.901(c), and other part 25 [subpart E ("Powerplant")] regulations.

What Is the Effect of the Amendment on Current Industry Practice?

The amendment neither adds any new or different objective to the current regulations, nor changes the way that any current certification practice is applied. Instead, the new added paragraph clarifies and codifies the way the FAA traditionally has applied the related rules. Specifying the fire protection requirement at all three levels—zone, installation, and component—in the regulations will help to ensure that, by looking at the same problem in many ways, an applicant will not overlook anything during design development and certification.

What Other Options Were Considered and Why Were They Not Selected?

The FAA has not considered another alternative. Revising part 25 to include the new paragraph eliminates an

identified Significant Regulatory Difference (SRD) between the wording of part 25 and JAR-25, without affecting currently accepted industry design practices. The benefits of eliminating an SRD such as this are:

- More consistent interpretations of the rules can be expected,
- Harmonization goals are fulfilled, and
- The relations between regulatory authorities may be improved.

Is Existing FAA Advisory Material Adequate?

There currently is no formal advisory material specifically about § 25.1183. FAA Advisory Circular 20-135, "Powerplant Installation and Propulsion System Component Fire Protection Test Methods, Standards, and Criteria," does reference § 25.1183 in some of its guidance. At this time, however, the FAA does not consider that further guidance material is needed.

What Comments Were Received in Response to the Proposal?

The FAA received four comments in response to the proposal. All of the commenters support the proposal.

One of these commenters also requests that the FAA change proposed paragraph 25.1183(c)(1) to clarify the phrase "other regions of the airplane." The proposed text states that components must be fireproof if, when exposed to fire, they could result in fire spreading to "other regions of the airplane." The commenter does not consider that this wording clearly means "other regions *beyond* the designated fire zone," not merely to other regions *within* the fire zone.

The FAA agrees with the commenter's interpretation of the intent of the rule; however, we do not agree that a change to the rule text is necessary. The proposed text of the rule is identical to that of the current JAR 25.1183(c), and we are not unaware of any confusion that there has been on this issue with regard to JAR 25.1183(c). Therefore, to attain harmonization, the rule is adopted as proposed.

What Regulatory Analyses and Assessments Has the FAA Conducted?

Executive Order 12866 and DOT Regulatory Policies and Procedures

Executive Order 12866, Regulatory Planning and Review, directs the FAA to assess both the costs and benefits of a regulatory change. We are not allowed to propose or adopt a regulation unless we make a reasoned determination that the benefits of the intended regulation justify its costs. Our assessment of this

amendment indicates that its economic impact is minimal. Since its costs and benefits do not make it a "significant regulatory action" as defined in the Order, we have not prepared a "regulatory impact analysis." Similarly, we have not prepared a "regulatory evaluation," which is the written cost/benefit analysis ordinarily required for all rulemaking proposals under the DOT Regulatory and Policies and Procedures. We do not need to do the latter analysis where the economic impact of a proposal is minimal.

Economic Evaluation, Regulatory Flexibility Determination, Trade Impact Assessment, and Unfunded Mandates Assessment

Changes to Federal regulations must undergo several economic analyses. First, Executive Order 12866 directs each Federal agency to propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs. Second, the Regulatory Flexibility Act of 1980 requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Trade Agreements Act (19 U.S.C. section 2531-2533) prohibits agencies from setting standards that create unnecessary obstacles to the foreign commerce of the United States. In developing U.S. standards, this Trade Act also requires agencies to consider international standards and, where appropriate, use them as the basis of U.S. standards. And fourth, the Unfunded Mandates Reform Act of 1995 requires agencies to prepare a written assessment of the costs, benefits and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local or tribal governments, in the aggregate or by the private sector, of \$100 million or more annually (adjusted for inflation.)

In conducting these analyses, FAA has determined that this rule:

1. Has benefits that do justify its costs, is not a "significant regulatory action" as defined in the Executive Order, and is not "significant" as defined in DOT's Regulatory Policies and Procedures;
2. Will not have a significant impact on a substantial number of small entities;
3. Reduces barriers to international trade; and
4. Does not impose an unfunded mandate on state, local, or tribal governments, or on the private sector.

The (DOT) Order 2100.5, "Regulatory Policies and Procedures," prescribes policies and procedures for simplification, analysis, and review of

regulations. If it is determined that the expected impact is so minimal that the rule does not warrant a full evaluation, a statement to that effect and the basis for it is included in the regulation. We provide the basis for this minimal impact determination below. We received no comments that conflicted with the economic assessment of minimal impact published in the notice of proposed rulemaking for this action. Given the reasons presented below, and the fact that no comments were received to the contrary, we have determined that the expected impact of this rule is so minimal that the final rule does not warrant a full evaluation.

Currently, airplane manufacturers must satisfy both the 14 CFR and the European JAR standards to certificate transport category aircraft in both the United States and Europe. Meeting two sets of certification requirements raises the cost of developing a new transport category airplane often with no increase in safety. In the interest of fostering international trade, lowering the cost of aircraft development, and making the certification process more efficient, the FAA, JAA, and aircraft manufacturers have been working to create, to the maximum possible extent, a single set of certification requirements accepted in both the United States and Europe. As discussed previously, these efforts are referred to as harmonization. This final rule results from the FAA's acceptance of an ARAC harmonization working group's recommendation. Members of the ARAC working group agreed that the requirements of this rule will not impose additional costs to U.S. manufacturers of part 25 aircraft.

Specifically, this rule adds JAR 25.1183(c) to 14 CFR § 25.1183. As discussed above, we have concluded that the only difference between the previously existing sections and new § 25.1183(c) added by this amendment is that the new paragraph will address fire protection specifically at the "component level," whereas the existing requirements address fire protection at the "zone level" or the "installation level." We have determined that the "component level" requirement is met inherently by meeting the more general, current "zone level" requirements. We consider that this rule will neither reduce nor increase the requirements beyond those that are already met by U.S. manufacturers to satisfy European airworthiness standards.

As this rule neither increases nor decreases certification requirements beyond those already in existence, we have determined there will be no cost associated with this rule to part 25

manufacturers. We have not tried to quantify the benefits of this amendment beyond identifying the expected harmonization benefit. This amendment eliminates an identified significant regulatory difference (SRD) between the wording of part 25 and JAR-25. The elimination of the SRD will provide for a more consistent interpretation of the rules and, thus, is an element of the potentially large cost savings of harmonization.

Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) of 1980, 5 U.S.C. 601–512, directs the FAA to fit regulatory requirements to the scale of the business, organizations, and governmental jurisdictions subject to the regulation. We are required to determine whether a proposed or final action will have a "significant economic impact on a substantial number of small entities" as defined in the Act.

If we find that the action will have a significant impact, we must do a "regulatory flexibility analysis." However, if we find that the action will not have a significant economic impact on a substantial number of small entities, we are not required to do the analysis. In this case, the Act requires that we include a statement that provides the factual basis for our determination.

We have determined that this amendment will not have a significant economic impact on a substantial number of small entities for two reasons:

First, the net effect of the proposed rule is minimum regulatory cost relief. The amendment requires that new transport category aircraft manufacturers meet just the "more stringent" European certification requirement, rather than both the United States and European standards. Airplane manufacturers already meet or expect to meet this standard, as well as the existing part 25 requirement.

Second, all United States manufacturers of transport category airplanes exceed the Small Business Administration small entity criteria of 1,500 employees for aircraft manufacturers. Those U.S. manufacturers include:

- The Boeing Company,
- Cessna Aircraft Company,
- Gulfstream Aerospace,
- Learjet (owned by Bombardier Aerospace),
- Lockheed Martin Corporation,
- McDonnell Douglas (a wholly-owned subsidiary of The Boeing Company)
- Raytheon Aircraft, and
- Sabreliner Corporation.

No comments were received that differed with the assessment given in this section. Since this final rule is minimally cost-relieving and there are no small entity manufacturers of part 25 airplanes, the FAA Administrator certifies that this rule will not have a significant economic impact on a substantial number of small entities.

Trade Impact Assessment

The Trade Agreement Act of 1979 prohibits Federal agencies from engaging in any standards or related activities that create unnecessary obstacles to the foreign commerce of the United States. Legitimate domestic objectives, such as safety, are not considered unnecessary obstacles. The statute also requires consideration of international standards and where appropriate, that they be the basis for U.S. standards. In addition, consistent with the Administration's belief in the general superiority and desirability of free trade, it is the policy of the Administration to remove or diminish to the extent feasible, barriers to international trade, including both barriers affecting the export of American goods and services to foreign countries and barriers affecting the import of foreign goods and services into the United States.

In accordance with that statute and policy, we have assessed the potential effect of this final rule and have determined that it supports the Administration's free trade policy because the rule will use European international standards as the basis for U.S. standards.

Unfunded Mandates Assessment

The Unfunded Mandates Reform Act of 1995 (the Act), enacted as Public Law 104–4 on March 22, 1995, is intended, among other things, to curb the practice of imposing unfunded Federal mandates on State, local, and tribal governments. Title II of the Act requires each Federal agency to prepare a written statement assessing the effects of any Federal mandate in a proposed or final agency rule that may result in a \$100 million or more expenditure (adjusted yearly for inflation) in any one year by State, local, and tribal governments, in the aggregate, or by the private sector; such a mandate is considered to be a "significant regulatory action."

This final rule does not contain such a mandate. Therefore, the requirements of Title II of the Unfunded Mandates Reform Act of 1995 do not apply.

What Other Assessments Has the FAA Conducted?*Executive Order 3132, Federalism*

The FAA has analyzed this final rule under the principles and criteria of Executive Order 13132, Federalism. We determined that this action will not have a substantial direct effect on the States, or the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, we determined that this final rule does not have federalism implications.

Paperwork Reduction Act

In accordance with the Paperwork Reduction Act of 1995 [44 U.S.C. 3507(d)], the FAA has determined there are no new requirements for information collection associated with this amendment.

International Compatibility

In keeping with U.S. obligations under the Convention on International Civil Aviation, it is FAA policy to comply with International Civil Aviation Organization (ICAO) Standards and Recommended Practices to the maximum extent practicable. We determined there are no ICAO Standards and Recommended Practices that correspond to these regulations.

Environmental Analysis

FAA Order 1050.1D defines FAA actions that may be categorically excluded from preparation of a National Environmental Policy Act (NEPA) environmental impact statement. In accordance with FAA Order 1050.1D, appendix 4, paragraph 4(j), this rulemaking action qualifies for a categorical exclusion.

Energy Impact

The FAA has assessed the energy impact of this final rule accordance with the Energy Policy and Conservation Act (EPCA), Public Law 94-163, as amended (43 U.S.C. 6362), and FAA Order 1053.1. We have determined that the amendment is not a major regulatory action under the provisions of the EPCA.

Regulations Affecting Intrastate Aviation in Alaska

Section 1205 of the FAA Reauthorization Act of 1996 (110 Stat. 3213) requires the Administrator, when modifying regulations in Title 14 of the CFR in a manner affecting intrastate aviation in Alaska, to consider the extent to which Alaska is not served by transportation modes other than aviation, and to establish such regulatory distinctions as he or she considers appropriate. Because this final rule would apply to the certification of future designs of transport category airplanes and their subsequent operation, it could affect intrastate aviation in Alaska.

Plain Language

In response to the June 1, 1998, Presidential memorandum regarding the use of plain language, the FAA re-examined the writing style currently used in the development of regulations. The memorandum requires Federal agencies to communicate clearly with the public. We are interested in your comments on whether the style of this document is clear, and in any other suggestions you might have to improve the clarity of FAA communications that affect you. You can get more information about the Presidential memorandum and the plain language

initiative at <http://www.plainlanguage.gov>.

List of Subjects in 14 CFR Part 25

Aircraft, Aviation safety, Reporting and recordkeeping requirements, Safety, Transportation.

In consideration of the foregoing, the Federal Aviation Administration amends part 25 of Title 14, Code of Federal Regulations as follows:

The Amendment**PART 25—AIRWORTHINESS STANDARDS: TRANSPORT CATEGORY AIRPLANES**

1. The authority citation for part 25 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701–44702, and 44704.

2. Amend § 25.1183 by adding a new paragraph (c) to read as follows:

§ 25.1183 Flammable fluid-carrying components.

* * * * *

(c) All components, including ducts, within a designated fire zone must be fireproof if, when exposed to or damaged by fire, they could—

(1) Result in fire spreading to other regions of the airplane; or

(2) Cause unintentional operation of, or inability to operate, essential services or equipment.

Issued in Washington DC on December 13, 2000.

Jane F. Garvey,
Administrator.

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